1988

Development of the Appropriation Docterine: Adapting Water Allcoation Policies to Semiarid Environs

J. David Aiken
George Washington University, daiken@unl.edu

DEVELOPMENT OF THE APPROPRIATION DOCTRINE

ADAPTING WATER ALLOCATION POLICIES TO SEMIARID ENVIRONS

J. DAVID AIKEN

> One hallmark of economic development, and indeed of civilization itself, may be found in the rules men devise to order their access to resources. When ambitious men began to develop the West, they found English common law deficient in many respects. It failed to provide workable rules among men as they struggled to get, develop, and use water where water was relatively scarce and often vital to life itself. So new laws and new institutions had to be developed. They are still developing.[1]

Water has been an important limiting factor in the economic development of the Great Plains. The Great Plains region is characterized by its unreliable precipitation and arid climate. The absence of abundant streamflow and the wide variations in precipitation have required adaptation of traditional water allocation principles to the new environs. The repudiation of the common law riparian doctrine in favor of the new and distinctly American appropriation doctrine is one of the colorful stories of the Old West. This new water allocation doctrine has created problems, notably groundwater depletion, however, even as it has solved others. The lack of water in the Great Plains and the West has also led to substantial governmental regulation and development, to a surprising degree in view of the traditional western ideology of rugged individualism.

J. David Aiken, who holds the J.D. degree from George Washington University, is associate professor of agricultural economics at the University of Nebraska-Lincoln. His articles on water law and policy have appeared in Nebraska Law Review, Colorado Law Review, *and other journals.*

[GPQ 8 (Winter 1988): 38–44]

COMMON LAW RIPARIANISM

The riparian doctrine of water allocation originated in Roman law, and was developed in English and American common law (i.e., through court decisions, not through legislation).[2] The basis of riparian law is that only those whose land borders a stream (called riparian land from the Latin *ripa*, bank) have a right to use its waters. According to the riparian doctrine, all others who use the stream are considered trespassers.

Another feature of the riparian doctrine is worth noting. Nonriparians could use water with a riparian's permission, but they could be stopped by any other riparian, regardless of whether their use interfered with that of any riparian. To prevent a nonriparian's use from becoming a prescriptive right, a riparian, even if not currently using water, was forced to enjoin legally any nonriparian's use. The riparian would do so to maintain the option of initiating a new water use in the future. Failure to object to a nonriparian's use within a certain period of time, typically ten years, resulted in loss of the legal ability to object to the use. The nonriparian would then have obtained a prescriptive right to use streamflow. The ability of riparians to prevent nonriparians from using water, even though the nonriparian use did not interfere with an existing riparian use (characterized as the dog in the manger feature of riparian rights), is difficult to justify when water supplies are scarce.

The major water uses in England before the Industrial Revolution were limited primarily to domestic uses and impoundments for running small gristmills. England's humid climate meant that water availability was not a problem for most uses. The use of water for water power, the only significant high-volume riparian water use, resulted in the English "natural flow" version of the riparian rights doctrine. Under the natural flow doctrine, every riparian landowner was entitled to the full flow of the stream without diminution in quantity or quality. Any significant water diversion for nondomestic purposes could be enjoined by a riparian landowner further downstream. The natural flow rule essentially prohibited any significant diversion of water from the stream. This rule was followed in England and in nearly all the eastern states.

With the advent of the Industrial Revolution, water power was no longer the preeminent power source, and the prohibition against water diversions made less economic sense. This change led to the development of the American "reasonable use" version of the riparian doctrine. The reasonable use doctrine allowed significant water impoundments or diversions if they were "reasonable" in relation to the needs of other riparians on the stream. Thus streamflow could be significantly reduced for economic purposes. Most eastern states that do not have water allocation statutes follow the reasonable use doctrine.

The riparian rights doctrine was developed in England's humid climate. It is primarily concerned with settling the rather infrequent conflicts among neighboring riparian landowners sharing a generally abundant supply rather than with allocating or rationing rights to use scarce water supplies on a regional basis. This geographical difference is the major reason the riparian rights doctrine is found in the humid eastern and midwestern states but not in the semiarid and arid plains and western states.

Prior Appropriation

Although riparian law is the traditional basis of American water allocation law, it has had serious shortcomings when applied to an arid region. First, in semiarid and arid regions nonriparians needed access to streamflow just as riparians did. Second, private litigation was not an efficient way to resolve annual water-use conflicts when western streams were inadequate to meet the demands placed on them. Finally, a riparian's need to maintain control over future water use by consistently excluding the nonriparian could not be justified in arid areas where the demand for water was great. These factors were sufficient to guarantee that alternative bases would be established to allocate scarce water supplies in arid and semiarid environments.

Under the appropriation doctrine, rights to use water were based not on owning riparian land but rather on actually using water for domestic or some economic purpose. As discussed below, conflicts between appropriations were resolved on the basis of temporal priority: the appropriator initiating his water use first (the "senior" one) was entitled to

water at the expense of those "juniors" whose uses were initiated later.[3] This doctrine of first come, first served was first recognized as an extension of mining camp customs regarding claims to water rights.[4] Court decisions in California and Colorado, and the first administrative appropriation statute in Wyoming, established the basis for water law throughout the Great Plains and the West.

The California gold rush led to the first reported court decision embracing the appropriation doctrine. To understand this decision, one must also understand the development of the 1849 gold rush. After the discovery of gold at Sutter's Mill in 1848 the population of California increased a hundred fold as forty-niners came West to make their fortune. At this time much of California had not been homesteaded and was still in the public domain. Since the miners did not homestead the property, legally they were trespassers on the public domain. Early prospectors rarely came into contact with one another and there was no reason to stake a claim or file a notice of discovery. Typically, if a miner made a strike he would stay and work it to the greatest extent possible. When he had to quit he would leave his tools on the ground, which served notice to all that this particular gold strike had been appropriated. As McGowen notes, "When disputes did arise, the gun proved to be an entirely adequate method of adjustment."[5]

When the forty-niners arrived, these relaxed customs were no longer suitable. The tendency of early miners to monopolize local diggings was resented by the later comers, who reasoned that all miners were trespassers on the public domain and that no trespasser had a superior right to another. This situation resulted in violence replete with claim disputes, claim jumping, and private wars, after which the mining camp custom developed that a miner could claim only as much land as he could work. The first miner to stake a claim could keep it as long as he was actively working it. But if the miner quit the claim it was available to others.

Water played an important role in the development of mines, particularly placer mines, in which gravel was washed in sluice boxes hundreds of feet long to separate it from the gold. Often water would be transported great distances from the stream to the placer mine. This gave rise to ideas of prior appropriation: that a right to use water, including nonriparian use, could be established by appropriating the water for use; and that the claims of earliest users would be superior to those of later users. These mining camp water customs, based on mining claim customs, were judicially adopted by the California Supreme Court in the 1855 decision of *Irwin v. Phillips*.[6]

The California Supreme Court later limited application of the appropriation doctrine to land in the public domain and applied the riparian doctrine to privately owned lands, resulting in a hybrid system of riparian and appropriative rights.[7] This "California doctrine" approach of legally recognizing both riparian and appropriative rights was followed in the Great Plains states of North Dakota, South Dakota, Nebraska, Kansas, Oklahoma, and Texas.

The Colorado Supreme Court, however, rejected the riparian doctrine entirely and adopted the principle of prior appropriation as its common law (i.e., judge-made law) rather than the English common law of riparian rights.[8] The "Colorado doctrine" of recognizing appropriation water rights was followed in the Plains only by Colorado itself, Montana, Wyoming, and New Mexico.

Although the California and Colorado court decisions established a common law basis for appropriation, this system had limitations. The court decisions established that water could be appropriated and that senior appropriators, as against junior ones, would be entitled to water during shortages. However, the system relied solely on litigation for its enforcement. Priorities still had to be established and enforced against junior appropriators through litigation. Thus, common law appropriation protected the early use of senior appropriators, but those rights could be enforced only through cumbersome, time-con-

suming, and expensive litigation. Moreover, prospective appropriators had no convenient way to obtain information regarding the rights of senior appropriators short of physically surveying the entire stream. These shortcomings led to the development of administrative appropriation, pioneered in Wyoming.

The Wyoming statute, enacted in 1890, established a state engineer who would have primary responsibility for administering the appropriation statutes. All those who wished to appropriate water were required to apply to that officer for a permit, and only those applications that received permits could be developed. Appropriation applications could be denied when denial would be in the public interest. Pre-statutory appropriators were required to file their claims with the state engineer for adjudication regarding quantity and priority date. All appropriations would be on record with the state engineer, who could administratively cancel appropriations for nonuse.

The Wyoming statute had many advantages over common law appropriation. Information regarding outstanding priorities and quantities appropriated was available from the state engineer. These centralized appropriation records allowed prospective appropriators to make a reasoned assessment as to whether there was water available for appropriation. The engineer could deny permission for unwise appropriations. Unused appropriations would become available to new appropriators. But from the appropriator's perspective, the most important feature of the Wyoming statute was administration of priorities. A senior appropriator who was not receiving all the water that he was entitled to would contact the state engineer's office. An official from the state engineer's office would then order upstream junior appropriators to cease diverting water until the downstream senior appropriator filled his quota. The administration of priorities is still an annual occurrence in appropriation states.[9] The relative ease with which priorities are administered gives senior appropriations their real value.

Future Issues

The appropriation doctrine is a true institutional innovation, and is much better suited to semiarid and arid regions than is riparianism.[10] Water may be used wherever it is most needed without regard to whether the land borders a stream. Appropriators who undertake significant investment in water-using facilities know that their water right will be legally protected regarding subsequent uses. In most states a senior appropriator's right will be enforced by state water administrators rather than through private litigation. The result is that early water users enjoy substantial security in their water rights. Later appropriators will be able to acquire needed water either through impoundment or, as discussed below, by purchasing existing senior appropriations.

The appropriation doctrine has not been without its critics. A principal criticism has been that the doctrine hinders the economic transfer of water rights from older uses, typically irrigation, to more current industrial (principally energy development) and municipal needs.[11] This criticism is generally unfounded since most western states have established administrative procedures for allowing water rights to be sold to accommodate new users.[12] A second criticism, that appropriation does not facilitate protection of environmental values, reflects not so much a flaw in the appropriative theory itself as it does a political reluctance, primarily on the part of irrigators, to allocate water for environmental purposes. A third criticism, better justified, is that appropriation has encouraged inefficient water use. This feature of appropriation has been reinforced through federally subsidized water projects. A final (and, in this writer's opinion, the most important) criticism concerns appropriation's inability to deal with groundwater depletion.

Water-use efficiency. In 1975, 83 percent of the fresh water consumed in the U.S. was used for crop irrigation.[13] This figure rose to more than 90 percent in the West. Appropriation is

at least partly responsible for discouraging the adoption of water-saving techniques in irrigation, the largest consumptive use of water in the West and in the nation. Use of irrigation scheduling techniques could result in significantly reduced irrigation water demands.[14] As it is, an appropriation authorizes the holder to use a specific quantity of water for a specific use on a specific quantity of land. If the appropriator uses his water more efficiently he cannot apply the saved water on additional land: he must acquire an additional appropriation to do so.[15] Because of the temporal priority rule, the appropriator is likely to lose the saved water to other water users, i.e., existing appropriators on the same stream. The appropriator therefore has little incentive to increase water-use efficiency.

The rationale for this rule is that prohibiting the use of water saved through conservation techniques protects downstream users. When water is used for irrigation, some is evaporated and some is transpired by the crop. The rest, at least in theory, finds its way back to the stream as return flows, either as overland runoff or as percolation into a groundwater reservoir that may feed the stream. If an appropriator is allowed to increase the number of acres he or she can irrigate with a fixed amount of water, the quantity of water transpired in crop production will increase (unless the irrigator shifts to crops using less water), and return flows will be reduced correspondingly. In other words, the consumptive use of the water is increased at the expense of downstream appropriators.

Appropriative water rights are based on the notion of beneficial use; i.e., use without unnecessary waste.[16] In practice, however, this theory results in inefficient use, particularly in irrigation.[17] Irrigators are not required to use the most efficient irrigation methods but only reasonably efficient methods at the time the appropriation was initiated.[18] Thus, methods that were reasonable during the 1880s would pass muster today if employed pursuant to an 1880s appropriation, even though current practices would require less than half the water employed using irrigation methods of the 1880s. An interesting question is whether a change in the legal concept of what practices are wasteful, i.e., what constitutes a beneficial use of water, can be legislated retroactively. In other words, the issue is whether legislatures or water administrators can require irrigators to use less water than they have been using. Although as a matter of theory there seems to be no legal impediment to this approach, western legislators and water administrators have not attempted to force appropriators to improve their irrigation water-use efficiency.

Requiring all irrigators to employ modern irrigation scheduling practices and thus to divert less water has important equity considerations. Under the current administration of priorities, during periods of water shortage a senior appropriator is entitled to receive the full amount of the appropriation to continue wasteful irrigation practices even while a junior appropriator neighbor receives no water at all. Allowing one irrigator to waste while another does without when there is enough for both is unfair and should not constitute a "beneficial" use of water. Requiring all appropriators to use less water would make more water available to junior appropriators, especially during periods of shortage, and would result in a more equitable distribution of available water supplies.

Groundwater Depletion. Perhaps the greatest failure of appropriation has been with regard to groundwater depletion, although the western states using the most groundwater do not apply the appropriation doctrine to it.[19] Under prior appropriation, senior appropriators generally are entitled to administrative protection when junior appropriators interfere with their water withdrawals. Most appropriation states, however, provide more limited protection to senior appropriators. For example, new groundwater appropriations may be prohibited or limited if they would interfere with senior appropriations. A common approach, limiting withdrawals to maintain "reasonable pumping depths," although it would not

necessarily maintain a senior appropriator's original pumping depth, guarantees that water levels will not fall below his economic reach. To take logic to an extreme, junior groundwater appropriators could be forced to, in effect, abandon their wells when their pumping threatens to deplete the supply for senior groundwater appropriators.

Again, this raises the unpleasant specter of requiring a senior appropriator to demand that a neighboring junior appropriator cease pumping groundwater so that the senior appropriator can continue an inefficient use. A more appropriate method would be to require all appropriators to employ more efficient methods of water use in order to allow junior appropriators to share in groundwater use.

States have been reluctant to come to grips with the problem of groundwater depletion. The typical approach has been to prohibit new groundwater uses in areas where groundwater supplies are being depleted but not to regulate existing uses. This policy penalizes those who have done nothing to cause depletion and rewards those who have caused the problem by allowing them to monopolize the remaining supply. In part, this policy reflects federal reclamation policies, in place for many years when the federal government stood ready to build a reclamation project primarily at federal expense for any irrigators who wanted one.[20]

Such an apparently generous (but shortsighted) policy discouraged states from taking the unpleasant step of regulating existing groundwater use in order to extend the physical and economic life of groundwater supplies and thereby protect the local and regional economies that depend on irrigation. The recent High Plains Study conclusions and current political concerns for reducing federal spending and the federal deficit, however, suggest that the federal government's generous reclamation policies will be no more. The study concluded that the cost of rescuing the High Plains region from groundwater depletion through importing Missouri River water to the Great Plains states of Texas, New Mexico, Oklahoma, and Kansas was too expensive for even the federal government to undertake. Similarly, the Reagan administration has promulgated new guidelines and cost-sharing requirements for evaluating the economic benefits of proposed water projects. The new cost benefit formula would require net national economic benefits from project construction before federal project funding could be obtained. In the Great Plains such projects would be used to grow surplus crops, primarily feed grains. Given the high costs of agricultural price support programs, there seems to be little national economic benefit in subsidizing irrigation of crops of which there is already an overabundance.

Once western states realize that federal rescue projects are a thing of the past, they may begin to deal more realistically with groundwater depletion. When they do so they are likely to conclude that requiring irrigators to employ a higher degree of water-use efficiency is an indispensable element in new state groundwater policies. Although the appropriation doctrine is flexible enough to accommodate these legal changes, state legislators and water administrators must have the political courage to make these changes to prevent groundwater depletion. If changes are not made, the appropriation doctrine will lose the evolutionary resiliency that has characterized its historical development.

NOTES

1. Upchurch, "Forward" in I. Hutchins, *Water Rights Laws in the Nineteen Western States* (USDA Misc. Pub. No. 1206) at *v* (1971).

2. For a brief and readable description of the development of the riparian doctrine, see American Law Institute, *Restatement of the Law, Second, of Torts*, ch. 41 (1979).

3. For a discussion of prior appropriation, see Hutchins, *Water Rights Laws*, I: 157-78.

4. Elements of appropriation in Arizona and New Mexico were based on Spanish law, although Hutchins suggests that this was limited only to authorizing nonriparian uses and did not include the important concept of temporal priority among appropriators. Elements of appropriation law, including temporal priority, developed in the Mor-

mon settlement of Utah. The influence of Spanish and Mormon water allocation doctrines was limited, however, whereas the California, Colorado, and Wyoming doctrines influenced the water law development of all seventeen continental western states, including New Mexico, Arizona, and Utah. Hutchins, *Water Rights Laws*, I: 160-63.

5. For an excellent account of the California gold rush and its impact on the development of the appropriation doctrine, see McGowen, *The Development of Political Institutions on the Public Domain*, 11 Wyo. L.J. 1 (1956).

6. Irwin v. Phillips, 5 Cal. 140 (1855).

7. Lux v. Haggin, 69 Cal. 255, 10 P. 674 (1886).

8. Coffin v. Left Hand Ditch Co., 6 Colo. 443 (1882).

9. A few appropriation states, notably California, do not have a statewide system of administrative enforcement of priorities.

10. Trelease, *Water Law, and People: The Role of Water Law in Conserving and Developing Natural Resources in the West*, 18 Wyo. L.J. 3 (1963).

11. National Water Commission, *New Directions in U. S. Water Policy* at 124-26 (1973).

12. Nebraska is a notable exception: surface water rights can be sold there only if they are used for the same purpose in the same river basin. Thus, new industrial and/or municipal uses cannot be accommodated legally through the sale of surface water appropriations. This antiquated approach exists in Nebraska because of the general availability of groundwater to satisfy municipal and industrial water demands.

13. C. Murray and E. Reeves, *Estimated Water Use in the United States in 1975* (U. S. Geol. Survey Cir. No. 765, 1977) at 8.

14. For a discussion of water use efficiency, see Aiken, *The National Water Policy Review and Western Water Rights Reform: An Overview*, 59 Neb. L.Rev. 327, 329-33 (1980).

15. Salt River Valley Water Users' Ass'n v. Kovacovich, 3 Ariz. App. 28, 411 P.2d 201 (1966); Dickinson, *Installation of Water Saving Devices as a Means of Enlarging an Appropriative Right to Use Water*, 24 Nat. Res. Law. 272 (1969).

16. Hutchins, *Water Rights Laws*, I: 489-503, 506-14, 545-46.

17. Ibid., I: 514-15. Some (but not all) western states have supplemented this legal definition of beneficial use with an enumeration of specific beneficial uses.

18. Tulare Irr. Dist. v. Lindsay-Strathmore Irr. Dist., 3 Cal. 2d 489, 45 P.2d 972 (1935); Hutchins, *Water Rights Laws* I: 644-50.

19. For a discussion of groundwater depletion, see Aiken, *Ground Water Mining Law and Policy*, 53 Colo. L.Rev. 505 (1983). California, Texas, and Nebraska represented approximately 60 percent of total groundwater withdrawals in the West in 1975, according to Aiken, 334-35n41. None of these states apply appropriation to groundwater, while all other Great Plains and western states do.

20. For a discussion of federal reclamation policies and groundwater depletion, see Aiken, *New Directions in Nebraska Water Policy*, 66 Neb. L.Rev. 8, 11-19, 40-48, 50-53, 74-75 (1987).